



BROMELIAD SOCIETY OF GREATER CHICAGO

THE BSGC NEWS

January/February 2020

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Lori Weigerding

Our meeting will be March 8th at 2 pm in the Lakeside room at the Chicago Botanic Garden. Steve and I will show pictures from our visit to Australia.

President's Column

Wow, what a winter we're having! It's been very interesting, a little snow, rain, sleet, then freezing temps, then it all melts. I hope everyone is doing well thru it all.

Our plants will certainly be happy to get back outside and enjoy the warm sunshine. I know we will all be too.

I hope to see you all at our first meeting in 2020 on March 8, 2020. Martha and Steve will be showing pictures from their trip to Australia.

Lori Weigerding

In the February 2020 Bromeliad Society/Houston's Newsletter, David Whipkey's Word was Trichomes

The other day I was admiring my favorite Tillandsia. It was a lovely tectorum. Or at least it was lovely when I bought it at a sale a few years ago. Now it is just a dried up old dead plant. For me a tectorum purchase is always an expression of optimism over experience. I killed this last one in a month or two, but for some reason I keep the desiccated plant around. What can I say? I am a sucker for a good set of trichomes.

Let us make trichomes the word of the month.

A Bromeliad Glossary published by the Bromeliad Society, Inc. defines trichome as "The scales found on the leaves of most bromeliads; the absorptive organ." Not very informative.

The Biology of the Bromeliads by David H. Benzing defines it as: "**Trichome** (hair or scale) – an epidermal (skin) structure". Still doesn't make it. I guess I am going to have to actually reread the book. Now I am not going to lie to you. Unless you majored in biology or botany in college, The Biology of the Bromeliads is not an easy read. Having done so, here goes my attempt at a Whipkey definition.

If a plant is to survive it needs to have some basic needs satisfied. It needs sunshine, water, minerals, and CO₂. It also has to get rid of waste materials such as O₂. If you happen to be an epiphytic plant growing in the top of a tree, sunshine is abundant. However, getting water, minerals and CO₂ is a bit of a problem. Want to know what the solution is? Yes ladies and gentleman you guessed it, trichomes! Besides looking good, they are very functional.

Referring to the drawing at the left you can see that a trichome has 3 types of cells. (Cap – Wing – Stalk) The stalk cells are below the leaf surface and allow water and mineral salts to enter the plant. They are covered by the cap cells and wing cells which collectively are called the dome. The dome is a plate like shield. The edges of the dome, the wings, pull away from the leaf surface (epidermis) when they are dry. As the dome absorbs water, the leaves flatten. When the wings of the dome are up, the stoma is uncovered. When the stoma is

uncovered water vapor, oxygen, and carbon dioxide can exit and enter the plant. Plants (like my dead tectorum) that have dense arrangements of trichomes can only exchange gases when they are dry. If the wings are constantly wet and covering the stomata the plant can't take in the carbon dioxide that it needs to make food, and it can't get rid of the waste products of photosynthesis such as oxygen. To make a long story short the plant dies.

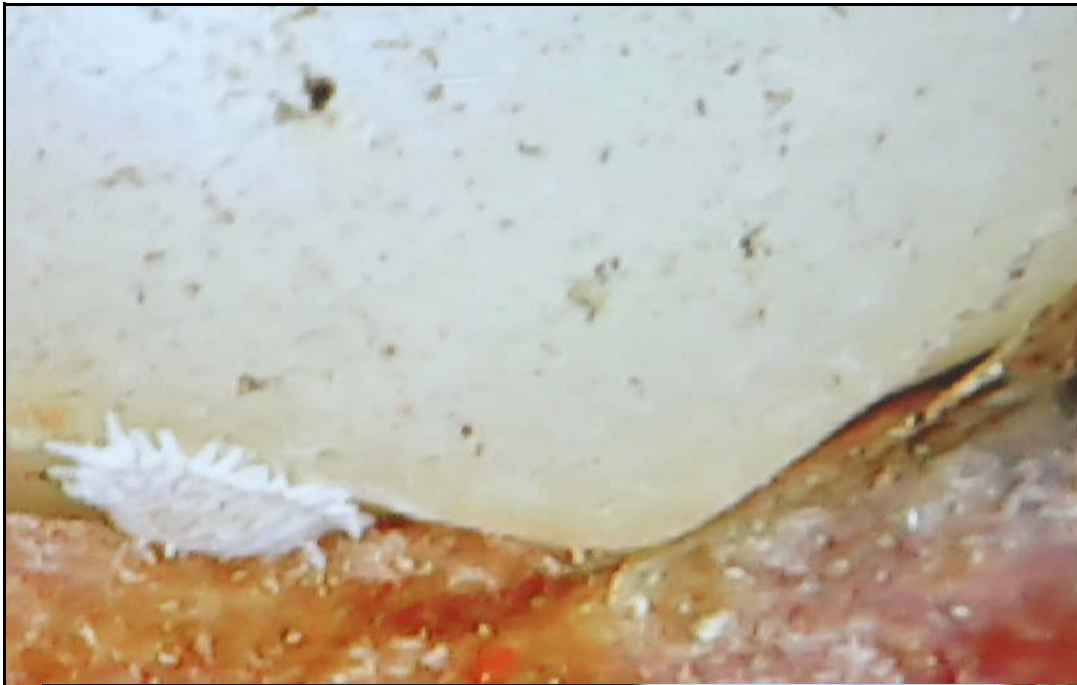
Trichomes have another use. They reflect light. Trichomes differ in size and shape. Plants growing in extremely bright light have dense clusters of trichomes to reflect light away from the plant. This allows the plant to remain cooler and avoid sunburn. These plants are usually silver or gray in color. Shade loving plants have fewer trichomes allowing more sunlight to fall on the epidermis. These plants tend to be greener in color. There it is. More than you ever wanted to know about **trichomes**.

This reminded me of the May 2019 article in the Bromeliad Society of Queensland. (Abridged)

Guest Speaker was Rob Murray who shared his enthusiasm for examining bromeliads under his USB microscope. He achieves x1000 magnification. A USB microscope is a low-powered digital microscope which connects to a computer, normally via a USB port. They are widely available at low cost for use at home or in commerce. Their cost varies in the range of as little as \$18, up to \$2,000. Rob had his connected to his computer and images were projected onto the big screen.



1000x 8 Led Usb digital microscope.



Magnified view of trichomes on a bromeliad.



Another photo of trichomes.

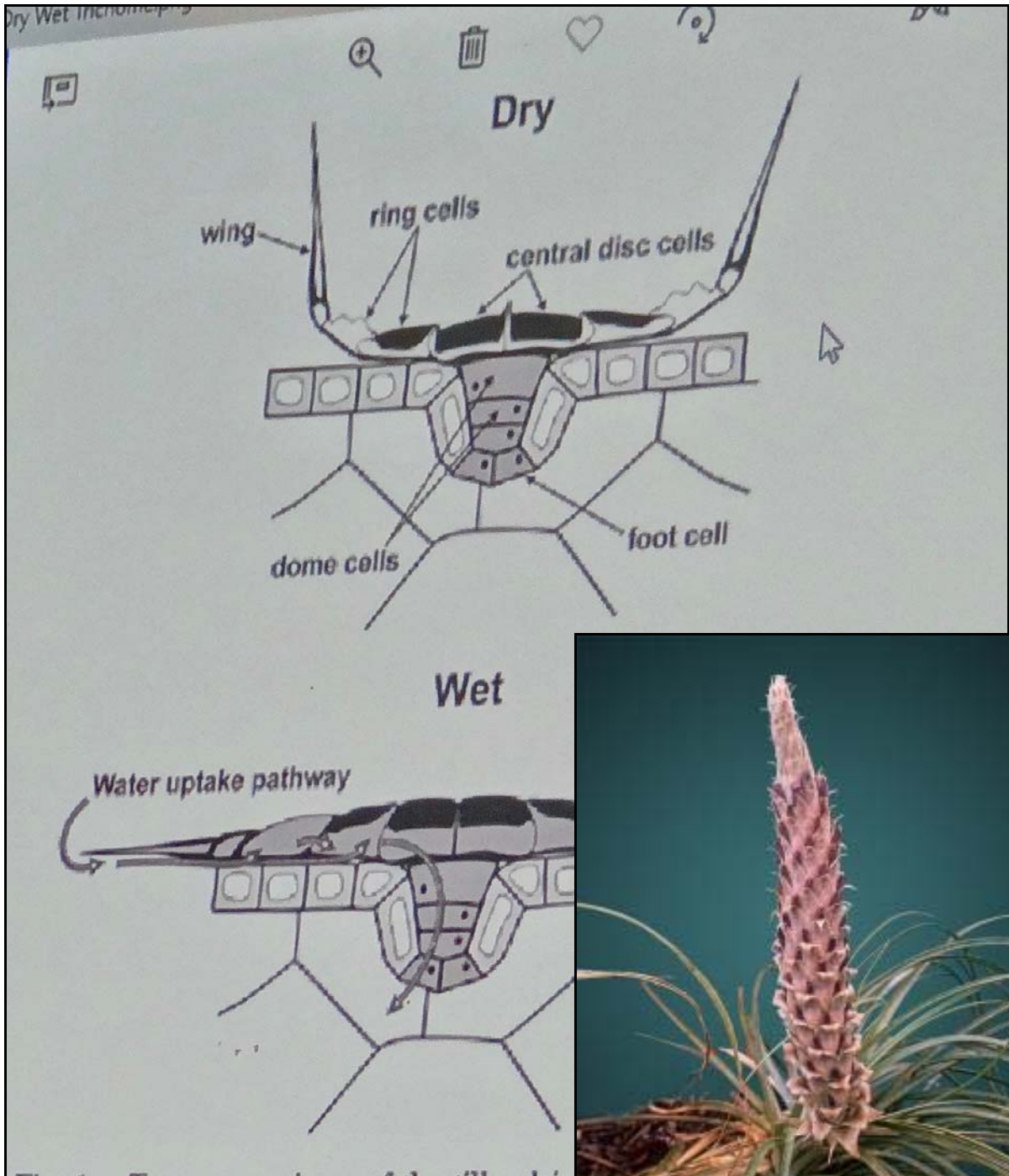


Diagram of trichomes when



Puya raimondii
 Rodales National Park
 From <http://bromeliad.nl/encyclopedia/index.php?find=Puya/raimondii>
 From www.trees.org

One of the plant genus that has

trichomes is the puya. The giant of the genus is *Puya raimondii*. I found an article in the October 1950 National Geographic Magazine by Mulford Foster, "Puya, the Pineapples's Andean Ancestor". Mulford contacted Martin Cardenas in Bolivia and arranged to travel there to see the bloom of the Puya near Cochabamba. They went to a village near where the plant was blooming to borrow the firemen's longest ladder. Dr. Cardenas who had a sense of humor told them to postpone all fires until they returned. The area where the puya was growing was rocky and dry. The Indians called it the great chuqui kjara (strong puya). They found *Puya raimondii* on the mountain Huakaqui. Its charred trunk indicated it has survived fires which the Indians often set. Mulford was to be the first to photograph it in color on his 60th birthday during its blooming period. The twenty foot center cluster contained hundreds of 18 inch branches radiating from it with each branch containing 3 inch white blossoms. There were more than 8,000 flowers. The hummingbirds sip the nectar from it. The experience made him think of Alice in Wonderland. He was amazed at the sight of the puya especially since the tallest growth of any other plant life in the area was not over two feet tall. One of the Indian helpers took his shoes off and climbed up flower by flower until he reached the freshest blooms at the top.

The location was 300 miles from the nearest existing group of *Puya raimondii*. He did not know how it got there. Later he asked Dr Cardenas to procure seeds but there were none since it had been burned before the seeds had ripened. Lower down the mountain they found a large colony of *Puya tunarensis* which is usually around 18 inches. It had brilliant red flowers.

Mulford mentioned that the Puya group is mainly an Andean group that generally grow in dry barren areas. The Costa Rica endemic *Puya dasylirioides* found near Santa Maria de Dota grows in wet swampy areas at 10,000 ft. In the Sierra Nevada de Santa Marta, Colombia there were several species of puya growing in wet, moist areas with their roots submerged in beds of sphagnum moss. He believed that puyas were originally swamp plants that were lifted up when the Andean mountain range rose.

He has found the puyas all come from elevations of 7,000 ft and above. *Puya fosteriana* comes from an elevation of 14,650 ft so it is adapted to the cold.

On his second trip to Bolivia he went to the mountain named Comanche. Among the giant granite boulders, there were around 400 *Puya raimondii*. He counted forty in bloom. The only other plant around was the cactus, *trichocereus bertramianus* which was only three feet high.



In our last newsletter we left you in Adelaide. From there we went to Kangaroo Island where of course you see kangaroos and also koalas. When you walk down to the coast which was cold and windy you see the Remarkable Rocks. Kangaroo Island is one of the places affected by the wildfires in Australia.



Remarkable Rocks

Next we went to Hobart in Tasmania. One cool rainy day, we went to the Maritime Museum where we learned a lot of the shipping history.

One of our favorite places was the Bonorong Wildlife Conservancy. The animals there have been injured and if they can be rehabilitated and released back into the wild. If they can't be rehabilitated then they are used to educate and also for breeding. It was originally a wildlife park in the 1980's. Greg Irons visited the park as a child and made it his goal to own it. After he became the owner, he made it a sanctuary for injured and orphaned wildlife. We

enjoyed feeding the kangaroos, the 3 legged echidna and the tawny frogmouth.



Blind three legged echidna



Martha feeds the Frogmouth

From Larry Clever

Winter greetings from West Virginia. I hope all is well with you and the Arizona weather is as enjoyable as I would expect it to be.

I had an idea I wanted to run by you. On a recent trip to Lowe's, I noticed an interesting display of some tillandsias in the plant department (picture attached). I thought to myself - I could make these. Long story short, a new hobby I started since moving to West Virginia is making things out of #2 plastic that I scrounge up from containers like milk jugs, laundry detergent bottles, etc. Being a long time recycle advocate, I thought it would be a good way to keep some things out of the landfill and it gave me something interesting to do. I started out making simple coasters and have expanded it to napkin holders, paper towel holders, soap dishes, cutting boards and small cups. I'm ultimately hoping to sell some of this at local craft shows this summer. I also attached a picture of some of the items I have made. This will give you an idea of how various color combinations look.



At any rate, I made a tillandsia display and would be happy to when you get back to You could pass them meetings and see if you something that might show. If there is an interest, I would be happy to make up a bunch and send them as a donation to the BSGC. I almost forgot to mention: my prototype measures about 1 5/8 x 1 1/2 x 6 1/4.



Lowe's version

couple samples of the blocks, as I call them, send them to you Chicago this spring. around at one of the think it would be sell at your next

Don't forget to renew your membership now, if you haven't already.

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